

Abstract

A dual stage invention is designed to autoignite an autoignition material before a low temperature gas generant melts. Low temperature gas generants include a high nitrogen content organic fuel with ammonium nitrate as the oxidizer. The dual stage inflator has a first gas generant and a second gas generant that are ignited by separate igniters. The first gas generant and the second gas generant are insulated from the inflator housing to delay the heat transfer from the housing to the first gas generant and second gas generant during a bonfire test, which needs to be passed to receive Department of Transportation classification. The dual stage inflator also has an autoignition cartridge for disposing of the second gas generant by the first gas generant after the first gas generant burns for a predetermined amount of time.